strains or to cultivate them in the Government stations in Syria.

3. The price of fuel is a major obstacle to agriculture and to the possibility of competing on the world market. While the price of a ton of mazut in the Euphrates area in Iraq is LS 21 its price in Kamishli is LS 175, i.e., more than eight times as much. The same is true to a lesser degree of the price of gasoline and kerosene due to excessive Government taxation. The Government used to refund to farmers a part of the taxes on gasoline and kerosene used in agricultural machinery, but it has recently abolished even this meager help.

4. The sale of agricultural machinery and especially of its spare parts needs supervision. Agents deliberately create scarcities during the period of greatest need so as to get the highest prices possible.

5. The system of transport from the combine to the stations needs complete revision. At the present time, farmers are obliged to use jute bags on the combines to fill with wheat. The bag is bought for LS 2 but is sold as wheat in Aleppo. Since the bag weighs 1.25 kilograms and the price of a kilogram of wheat is 26 piasters, the farmer gets less than 30 piasters for every 200 he invests in a bag. This means a loss of LS 14 per ton, without counting all the extra expense of handling on the combine, then on to the truck, then to the railway station, then on the railway and, lastly, discharging at Aleppo Station, then transporting by truck to the merchant's store. All this handling, necessitated by the use of jute bags is paid by the farmer to the amount of LS 4 per ton. Added to the loss on the bag it makes a total loss of LS 15. All this could be saved if transport could be so organized as to eliminate the need for jute bags.

6. The fluctuation and uncertainty of prices is a major obstacle to the continued progress of agriculture in Jazirah. The farmer who plants his seeds in October does not know whether he will sell his crop in July for ten piasters a kilo or for thirty. He lacks information on world prices and merchants take advantage of that and of the fact that he is constantly in need of money to buy a major share of the crop at low prices. But even if the farmer were informed about world markets, Government regulations constantly hamper the free opera-

III The Baghdad Railway

The Baghdad Railway which runs 247 kilometers in Syria is the principal means of transport for goods. It handles about 200,000 tons of goods every year. The bulk of Jazirah wheat is transported over it. But it has had in recent years keen competition from trucks in spite of the bad roads for several reasons. The Qamishli-Aleppo line passes for 70% of its length through Turkish territory and is under Turkish control. When the Turks choose to irritate the Syrians they restrict the entrance to the stations and in numerous other ways frustrate the Syrians and cause them hardship. Whole trains are unaccountably delayed for days in the Turkish stations.

Already passenger traffic is handled almost entirely by planes, cars and busses, except in winter months when the roads are unsafe. A bus charges LS 10 from Qamishli to Aleppo and makes the trip in 12 hours. A small car charges LS 20 and makes the trip in 8 hours. It takes the "Express" 20-22 hours to reach Aleppo from Qamishli and the fare is LS 30 in second-class "wagon lit" with tips.

For merchandise the train rate is LS 23. 5 per ton from Qamishli to Aleppo. It costs the farmer an additional LS 6-12 depending on the distance to transport a ton of wheat from the field to the station. There is also an amount of about LS 4 involved in handling, all of which makes the actual rate by train about LS 35.

The truck charges LS 35 from Qamishli to Aleppo during the wheat season but it carries the wheat directly from the combine in the field to the merchant's store in Aleppo thus reducing the handling expenses to a minimum and transporting the goods in the shortest time. If the farmer is not hard pressed for money, which is rather rare, and can wait until the winter months and spring, he can transport his wheat for a rate as low as LS 10-15 per ton by truck. Inversely, the cost of tranport from Aleppo to Jazirah rises in winter and spring and decreases in summer and autumn.

Though truck transport is more advantageous in many ways than transport by train, the number of trucks available and the condition of the roads make the transport of a whole crop by trucks impossible. To achieve that, a complete road network needs to be constructed, diesel trucks would have to be imported and the discriminatory tariffs against them abolished.

that process which has been going on since the beginning of history. But in the steppe and desert country where pasturing is possible and cultivation impossible, the Beduin still have an important part to play.

3

Approximately one-third of the population lives in towns. There are three towns, Beirut, Damascus and Aleppo, with between 200,000 and 300,000 inhabitants each; five others —Homs, Hama, Tripoli, Latakia and Dair az-Zur—with between 20,000 and 100,000. The inhabitants are mainly occupied in commerce and industry.

The structure of industry is changing more rapidly than that of agriculture. A two-fold change is taking place. On the one hand, the traditional textile, metal and other industries, which used to supply the needs of a great part of Ottoman Asia and the Arabian peninsula, are being killed by the Westernization of taste and by the competition of cheap Western and Japanese goods. On the other, modern industries are slowly being created, especially in the three principal towns, Damascus, Aleppo and Beirut. Their development has been hampered by paucity of raw materials, the scarcity of capital and to a lesser extent of technical skill, competition from Europe, America and lately from Japan, the smallness of the internal and the absence of an external market. The modern industrial equipment of the country is still confined to a small number of factories for foodstuffs, textile goods and certain other products for the internal market. The silk industry of Lebanon, which was important until it was overwhelmed by foreign competition and the introduction of artificial silk, has had a partial revival during the last few years.

Not only the industrial but the whole economic development of the country is handicapped by inadequate communications. There is only one modern port, Beirut, which has been developed by French capital and enterprise, and through which flows the bulk of the country's external trade. Tripoli is important as the terminus of one branch of the oil pipe-line from Iraq, but it does not yet possess adequate harbour-works; Latakia is small and undeveloped. The railway system, mainly built and administered by a French concessionary company, includes only a little over a thousand kilometres of track. Passengers and goods are carried

mainly by motor-car. The trunk-roads, built for the most part since the establishment of French rule, are good, local roads satisfactory in summer but often very bad in winter; motor transport across the desert to Iraq is well organized by private companies. A trans-desert railway has been planned but not built. There are several civil airports.

The defective financial system is a further obstacle to economic development. Credit facilities are inadequate; foreign capital has been invested in public utilities but not in industry; long-term investment and constructive enterprise have been discouraged by the instability of the currency. Since 1924 the legal currency of the country has been the Syro-Lebanese paper pound, issued by the concessionary Banque de Syrie et du Grand Liban, of which the ownership is mainly French. It is a franc-exchange currency, one pound being equivalent to twenty francs; and it therefore shared in the fluctuations of the franc. In 1941, after the invasion of Syria and Lebanon by the Allied forces, it was officially linked to sterling. As an unstable and a paper currency, it has never won the confidence of the bulk of the population, who prefer, in spite of official prohibitions, to use the Ottoman gold pound or the sovereign as the standard of value in important transactions; since the relation between the value of the gold pound and that of the paper pound is constantly changing, problems are always arising in regard to the rate of repayment of debts calculated in terms of gold but actually paid in paper.

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In commerce as in industry the old order is dying. So long as Syria and Lebanon formed part of the Ottoman Empire, their towns were centres not only for the internal trade of a great part of Ottoman Asia but also for much of its trade with Europe. The last generation has seen the disintegration of the Empire into a number of separate States and the creation of tariff-barriers and other obstacles to the free flow of goods; it has witnessed also the rise of the port of Haifa, and the consequent diversion of part of the transit-trade from Syria and Lebanon to Palestine. In addition, the decline of the traditional industries and the decrease in the demand for their products, the slow growth of modern industries and the absence of any considerable demand in the world for

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457 the end of 1953, even though Syria paid off during these years all but £ 10.2 million of a £S 44.6 million debt to Lebanon and repaid $1,454,123 to the International Monetary Fund.

Transport

• 489 The transport system which carries the country's commerce reveals many deficiencies. Although Syria is served by three railways, all were built before the breakup of the Ottoman Empire and therefore do not adequately serve the needs of an independent Syria. The gauges are not uniform, and there is no direct rail connection between Damascus and Aleppo. The port of Latakia, which handles most of Syria's overseas trade, is served only by roads. The railways in 1953 actually carried slightly less cargo than before the war. All of the substantial increase in traffic since the prewar period has been absorbed by motor transport. The number of all types of motor vehicles rose from 3,736 in 1939 to 13,146 in 1953, and the number of trucks from 873 to 4,742. Even such bulky commodities as cereals are now transported mostly by road. Yet the road system is also far from adequate and transport costs are very high.

504 Aside from Banias, which ships only oil transmitted by pipeline from Iraq, Syria has only one major port, Latakia. The volume of traffic at this port, which is still in process of development, has grown rapidly and amounted in 1953 to 90% of the overseas export and 46% of the overseas import trade of the country. The Lebanese ports of Beirut and Tripoli accounted for the balance. In the same year, however, almost half of the total volume of Syria's foreign trade went overland, principally to and from Lebanon.

Money and Credit

652 457 The monetary and banking system of Syria is still in the process of development. Although a new monetary statute enacted March 28, 1953 envisages the establishment of a government central bank within a few years, the note-issuing function meanwhile remains with the Banque de Syrie et du Liban (BSL) which first received the right to issue currency during the French mandatory regime. Gold and foreign exchange in the monetary cover is bought through the intermediary of the Exchange Office, an autonomous government agency established in April 1952. This

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CHAPTER 6 *TRANSPORT AND COMMUNICATIONS*

It is generally recognized that the development of transport and communications is one of the most urgent needs of Syria. Transport facilities have not kept pace with the expansion of production and particularly with shifts in the geographic pattern of agricultural output. Transport is generally costly and subject to interruption, and needs to be made cheaper and more dependable. The railways were all constructed before Syria became independent and are ill-adapted to serve the national economy. The roads are in part badly maintained, and the great majority are dirt roads or tracks, which in the rainy season can be used only with difficulty or not at all. The northeastern part of Syria, particularly the Jezireh, is most poorly provided with roads despite the fact that it has become the country's principal granary and source of exportable cereals. Domestic civil aviation is in its infancy, although Syria is rather well served by international airlines. With respect to telecommunications the country is in a better position. The telephone network has been considerably expanded and, although it has not kept up with the developing needs of certain rapidly growing commercial centers, a program to remedy the principal deficiencies is well in hand.

The transport and communications system must, of course, be developed primarily to facilitate the country's internal and external commerce. Syria, however, also serves as a transit country. In the past, before the opening of the Suez canal, its transit trade was undoubtedly much more important. In Syria, the goods of the East met those coming from Europe. A number of the principal cities, such as Aleppo and Damascus, owe to this trade their early commercial importance. They were the terminal points of the camel caravans from the East and the places where goods were transshipped to donkeys and mules to start the arduous trip across the mountain ranges to the Mediterranean. Even now, Syria has not wholly lost its importance as an avenue of international traffic. The Northern Railway carries traffic for both Turkey and Iraq, and the trans-Syrian desert road from Damascus conveys a considerable number of passengers and

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modest quantities of goods between Beirut and Baghdad. Above all, most of the foreign trade of Jordan flows through Syria to and from Beirut.

1 EXISTING TRANSPORT FACILITIES

A brief inventory of the principal transport facilities is an essential preliminary to a discussion of the problems and methods of coping with them.

The Railways[26]

Three railways operate in Syria—the Northern Railway, the Hedjaz Railway and the DHP (Chemin de Fer Damas, Hama et Prolongements).

The Northern Railway is the Syrian section of that international railway which achieved fame as the Berlin-Baghdad Railway. Coming from Baghdad and Mosul in Iraq, it traverses a portion of northeastern Syria from Tell Kotchek to Kamichliye, then enters Turkey, proceeding just along the boundary until it turns south to Aleppo and finally once again north to Turkey where one branch runs to the port of Iskenderun and the other to Istanbul. The Syrian sections are owned by the government and managed by a Director of Railways and Council Administration under the Ministry of Public Works. Out of approximately 400,000 tons of cargo carried in 1952, the Northern Railway transported about 101,000 tons for Iraq, mostly in transit, and some 106,000 tons, principally grain and coal, in transit for Turkey. Although the traffic is modest, the development of agricultural production in the Syrian Jezireh and the adjoining portions of Turkey have been instrumental in raising it from about 22 million ton-kilometers in 1938 to 55 million in 1953.

The Northern Railway links at Aleppo with the DHP, operated by a private French company under an 1893 concession and serving both Syria and Lebanon. The DHP system consists of both narrow- and standard-gauge lines. The most important standard-gauge line runs from Aleppo via Hama and Homs to the Lebanese port of Tripoli and thence along the Lebanese coast. Aside from agricultural commodities produced in the Homs-Hama region, it carries the bulk of transit traffic to and from Iraq coming over the Northern Railway. It also carries Syrian cereals and

[26] See Annex H, p. 425.

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494 rail facilities on the principal routes along which commodities had to be moved in growing volume, such as from the Jezireh to Aleppo and Latakia. Unquestionably, also, transport over poor roads has been costly, entailing heavy depreciation and not infrequent interruptions of traffic.

II PRINCIPAL TRANSPORT ROUTES

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489 For an understanding of the transport problems confronting Syria it is also necessary to outline the principal routes over which traffic must move. One of the main transport lines is the north-south axis connecting Damascus with Homs, Hama and Aleppo to the north and with the Hauran, Djebel Druze and Jordan to the south. Crossing this axis in a west-easterly direction are three principal communication lines running from the three ports serving Syria—Beirut and Tripoli in Lebanon and Latakia in northwestern Syria. Of these three ports Tripoli is by far the least important, serving only the region immediately around Homs. Beirut is still an important port of entry for Syrian imports, although the volume handled by Latakia has been rising steadily. Through Latakia, however, goes the bulk of Syria's exports.

The west-east communications lines continue in a generally easterly direction after crossing the north-south axis at Aleppo, Homs and Damascus. Those continuing east of Aleppo and serving the Jezireh and the narrow but fertile irrigated lands of the Euphrates are by far the most important. On the other hand, the road or track running east from Homs through the Syrian desert is of little importance except for serving and patrolling the pipelines conveying oil from Iraq to the port of Banias in Syria and to Tripoli. Of somewhat greater significance is the trans-desert route from Damascus to Baghdad. Although for the most part only a track, it provides an all-weather route over which traffic can move between Lebanon and Syria on the one hand and Iraq and even Iran and Kuwait on the other hand. Over this route the well-known Nairo Transport Company carries on an active international passenger traffic with modern buses and a number of trucking concerns haul high cost products such as fruits and vegetables, machinery and rugs. No special urgency attaches to the improvement of the two routes running eastward from Homs and Damascus, however, and no further consideration will be given to them in this report.

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The First Priority: Latakia-Aleppo-Jezireh

The most urgent transport problem centers around the improvement of communications between Latakia and Aleppo and the Jezireh. The rapid development of northern and particularly northeastern Syria has made the east-west communication lines across this part of the country by far the most important arteries for the movement of bulk commodities. The Jezireh produces most of Syria's wheat export surplus, and the Jezireh, the Euphrates valley, and the Aleppo-Hama-Homs region contribute together nearly all of the country's barley exports. The same areas produce virtually all Syria's cotton, which has attained considerable volume over the last four years. Finally, northern Syria is to some extent, and can become even more, a transit zone between the Mediterranean and Iraq.

Some indication of the importance of the communications lines across northern Syria is given by the volume of goods handled in Latakia. Export traffic through this port rose from 13,700 tons in 1947 to 353,396 tons in 1953; in 1954 it was 630,720 tons. Of the 1953 tonnage, 62% consisted of wheat and barley and 21% of cotton, cottonseeds and cotton meal. The volume of imports has also grown rapidly—from 5,200 tons in 1947 to 176,364 tons in 1953 and to 208,343 tons in 1954.

From the east, principally the Jezireh, the volume of transport is even greater, approximating probably 500,000 tons annually in recent years. In the reverse direction, however, freight movement is much more modest—apparently less than 50,000 tons.

Transport conditions over these vital arteries are far from satisfactory. Latakia and Aleppo are linked by a metalled road over the Alaouit mountains which is much too narrow for the rapidly increasing truck traffic and is occasionally blocked by landslides. The road surface is not adapted to heavy truck traffic and is poorly maintained in many sections. From Aleppo an asphalt road runs eastward to Raqqa on the Euphrates river and continues down the river valley to Deir ez Zor, where it turns into a track leading to Abou Kemal on the Iraqi frontier. From Deir ez Zor there is a road north to Kamichliye via Hassetche, but the surface is for the most part so bad that traffic moves along parallel tracks. The truck route from the Jezireh does not, however, go through Deir ez Zor, but runs more directly from Km. 47 on the Hassetche-Deir ez Zor road along a cross-country track to Raqqa. The feeders to these main routes are also tracks which become impassable during the rainy season.

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As already indicated, the Jezireh is also served by the international railway which criss-crosses the frontier. It is difficult to use because the three railway administrations controlling it do not cooperate effectively, and crucial seasonal shortages of freight cars often hold up grain movements. By and large the railway assists only in the transport of commodities produced in a narrow belt along the frontier. While the railway annually transports between 150,000 and 200,000 tons of the Jezireh's agricultural output, much more moves by road.

The cost of transport across northern Syria is very burdensome and motor transport rates are subject to sharp seasonal fluctuations. In part, of course, this is caused by the unavoidably seasonal nature of the agricultural products traffic and the lack of adequate return cargo to the Jezireh. The very fact, however, that the Jezireh roads are impassable during much of the winter rainy season greatly accentuates the seasonal movement and necessitates a larger investment in trucks. Under such circumstances truck operators charge what the traffic will bear. During the harvest season it costs £S 40-50 per ton to transport grain from Kamichliye or Hassetche to Aleppo and about £S 25-30 from Ras el Ain to Aleppo. During the "dead season," such as the spring, following the rainy season, these rates are almost halved. The high rates are caused in part, of course, by the heavy maintenance and depreciation charges for trucks. On the railway the freight rate for grain from the Jezireh to Aleppo is the same the year around, about £S 25 per ton.

During most of the postwar period agricultural prices have been high, providing sufficient incentive to an expansion of production in areas remote from the port despite high transport costs. With the marked decline in prices during the last few years, however, the burden on the producers has become progressively more severe. Since transport and handling charges remained the same, they received a smaller proportion of the falling export price at the port. In 1953 transport charges of £S 50-60 per ton from the Jezireh to Latakia represented about a third of the f.o.b. export price of barley and somewhat more than a fifth of that of wheat. At the same time transport adds to the cost of production. Thus in the Jezireh gas oil for tractors and irrigation pumps is about 75-100% more expensive than at Homs and gasoline for harvesting combines is 20-25% higher.

The mission has given much thought to the question of how the transport problem in the north of Syria might most effectively be solved. Since the construction of a railway linking the Jezireh with Aleppo and Latakia

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has many proponents and a number of railway projects have been proposed in the past, we carefully considered the advisability of a railway line.[29] Railroads between Aleppo and Latakia on the one hand and Aleppo and the Jezireh on the other hand have generally been independently projected, but the mission believes one should not in the long run be contemplated without the other, for otherwise the maximum advantage of a through line to the port, avoiding costly transshipment at Aleppo, would not be realized.

The volume of traffic moving between the Jezireh and Aleppo and Latakia appears to make a railway economically attractive. In the westerly direction toward Aleppo there is an actual or potential flow of around 700,000 tons per year, if Iraqi transit trade is included, and from Aleppo to Latakia probably about 500,000 tons. In the reverse direction the volume might be 150,000 and 250,000 tons respectively. Of course, by no means all of this traffic would necessarily be captured by a new railway line. Some would continue to be carried by the existing railway, and some, particularly the higher cost "import cargo" and the "export cargo" originating at points more or less remote from the railway, would no doubt still be transported by truck. A new railway might count on carrying perhaps two-thirds of the available cargo. On this assumption the traffic handled by a new Jezireh railway, linked with the Iraqi railway at, say, Tell Kotchek, might well be somewhat over 400 million ton-kilometers per year, or about three times as much as the traffic on all railways in Syria during 1935.

The construction of a railway, however, requires a heavy capital investment. To build and equip a railway from Aleppo to Latakia over difficult terrain would probably cost about £S 80 million, and a line from Aleppo to Tell Kotchek might cost approximately £S 90 million, a total of about £S 170 million. On the other hand, the cost of improving and partially realigning the Aleppo-Latakia highway is estimated at £S 7.4 million; a proper road network linking the Jezireh with Aleppo would cost, according to Syrian government estimates, about £S 50 million (including £S 3.4 million for widening the existing Aleppo-Raqqa road); and an investment of £S 40 million would be required to handle by truck the volume of traffic indicated for the railway. Thus the investment in a railway would be about £S 73 million more than would be required for

[29] See Annex H, p. 430.

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corresponding road facilities. Actually, the difference is likely to be greater, for the need to build feeder roads to the railway and to improve the trunk highways would probably make a considerable investment in roads necessary in any event. However, investment in road vehicles which would be required to handle the rail traffic would be saved. Thus the additional investment entailed by the construction of a railway might be in the neighborhood of £S 100 to 110 million.

In terms of depreciation, maintenance and fuel, railway transport would cost the economy substantially less than road transport. On the basis of the anticipated traffic volume, the mission has estimated the annual savings in cost at between £S 15 million and £S 20 million. The additional investment of £S 100 million to £S 110 million might therefore be said to contribute between £S 15 million and £S 20 million to national income annually. A railway could no doubt reduce transport charges below existing levels and still earn some return on the investment.

Nevertheless, the mission is strongly convinced that it would be unwise to undertake the construction of a railway within the next five or six years. Our principal reason is that the government could find the necessary capital only at the expense of other needed investments likely to make a greater contribution to national income. We have sought in this report to recommend a balanced development program within the limits of the financial resources available. If provision is to be made for the construction of a railway, it would be necessary to curtail drastically proposed outlays in other fields of development. For instance, it would probably be necessary to eliminate a considerable amount of the irrigation program we have proposed. The substitution of a railway project for irrigation works could only result in a loss to the Syrian economy. The mission estimates that, on the average, irrigation projects would make almost twice as large a direct contribution to national income as would the proposed railway. Moreover, an increase in primary production through irrigation and reclamation is likely to bring about a larger indirect expansion in national income, particularly in the commercial and transport sectors. A secondary reason for the mission's view is that private enterprise is willing to undertake the necessary investment in road transport, other than for the roads themselves, whereas the government would have to shoulder the entire burden of a railway investment. In a country where it is very difficult for the government to mobilize private capital for the financing of public investments, this is an important consideration. If and when it becomes easier

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to do so, and alternative investment opportunities become less attractive, the question of building a railway might well be reviewed.

The mission would be more favorably disposed to a railway if there were no alternative means of reducing the present high transport rates between the Jezireh and Aleppo and Latakia. However, the building of good, all-weather roads, supplemented by the construction of grain storage facilities in the Jezireh, should make it possible to lower transport charges significantly by reducing truck maintenance and depreciation costs and somewhat diminishing seasonal transport peaks. The mission recommends, therefore, that the government undertake this task as a matter of high priority.

To this end the following program should be carried out within the next five or six years:

1. *Improvement and partial realignment of the Aleppo-Latakia road.* The improvement and widening of this road is imperative, and since topographic conditions make widening of certain sections impossible, an entirely new road must be built in part. A new road, for example, will be necessary for a distance of some 30 kilometers west of Jisr ech Chog-hour. Improvement of the section south of Idlib and crossing the Djebel Zâouiye would also be extremely difficult. The mission recommends strongly that this stretch be replaced by a north-south road running through the Roudj. Such a road would not only avoid most of the mountainous terrain but would simultaneously serve the new agricultural district of the Roudj. The cost of the entire project, including the new road construction, is tentatively estimated at £S 7.37 million.

2. *Improvement and widening of the Aleppo-Raqqa road.* This road, 190 kilometers long and part of the trunk highway to the Jezireh, has an asphalt surface only four to five meters wide. In line with recent proposals made by the Syrian government, the mission suggests its widening to six meters, with a two-meter berth on each side. The government has estimated the cost at £S 3.38 million.

3. *Construction of a new road connecting Raqqa with Kamichliye, via Kantari, Tell Tamer and Tloul Mohammed, and continuing from Kamichliye, via Demir Kapu and Deirik, to Ain Divar on the Syrian-Turkish frontier* (total length: 362 km). Unlike earlier proposals, the road we recommend would not follow the present truck route between Raqqa and Km. 47 on the Hassetche-Deir ez Zor road, but would run north of the Djebel Aabd el Aaziz. In this way it would tap a much larger agricultural

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region, including the dry-farming area south of Ras el Ain and the irrigated area in the Khabour river valley. It would be advisable to start the construction of the Kamichliye-Ain Divar section first, because this rich agricultural region of heavy rainfall is now the most inaccessible part of the Jezireh. To feed the trunk highway the mission also recommends the construction of the following roads: (1) Ras el Ain-Hassetche, crossing the main highway at or near Tell Tamer (73 km); (2) Hassetche-Tloul Mohammed (60 km), thus linking the provincial capital with Kamichliye, the region's commercial center; (3) Derbassiye-main road (30 km); (4) Demir Kapu-Tell Kotchek (30 km); and (5) much farther to the west, Tell Abiad-Kantari (46 km). The first two are considered the more important. In general this proposed road network conforms to the most recently expressed views of the Syrian government, which has tentatively estimated the cost, pending engineering surveys, at about £S 46 million.

North-South Communications

We turn now to a consideration of the other principal transport routes. With respect to the north-south transport axis, improvement of communications between Aleppo and Damascus is most important. A direct standard-gauge railway link between these cities has often been proposed, either by the laying of an additional rail on the narrow-gauge line from Damascus to the junction with the standard-gauge line at Rayak in Lebanon or by the building of a new railway from Damascus to Homs, where it would connect with the DHP line to Aleppo. The mission is convinced, however, that the volume of bulk goods suitable for rail transport moving between Aleppo and Damascus is far too small to justify the large investment required, at least £S 18 million for the former and £S 36 million for the latter project. The solution is rather to improve and widen the Aleppo-Damascus road. The section between Hama and Aleppo urgently demands improvement, and the entire road should be widened by at least one meter to permit easier flow of two-way vehicular traffic. The cost of widening would probably be about £S 10,000 per kilometer or a total of about £S 4 million.

The transport route south from Damascus to Dera'a and the Jordanian frontier is served both by road and the Hedjaz Railway. The problems of the latter have already been discussed. The road, although not as well

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travelled as the one to Aleppo, is still important for the transport of Syrian agricultural products and petroleum products destined for Jordan. The very bad section between Cheikh Meskine and Dera'a requires early attention, and the entire road should be widened by one meter after the completion of the Damascus-Aleppo road project. The mission estimates the total cost involved at £S 1.3 million.

Other Road Projects

Together with the Latakia-Aleppo-Jezireh road, the route between Damascus and Beirut is the most important to the Syrian economy. In fact the traffic on the Beirut-Damascus road is denser and steadier than that on the Latakia-Aleppo road. An urgent program to improve the surface of this road should be undertaken by the two countries concerned. For the improvement of the 35-kilometer section in Syrian territory, the mission anticipates that £S 1.05 million will need to be spent. It can be expected, however, that before many years more thorough-going measures will be necessary to accommodate the constantly growing traffic. To meet this longer-term need, proposals have been made to build a new road paralleling the old one and to construct a long tunnel at Hamana to bypass the most dangerous section across the Lebanon range, where traffic is often held up by fog and snow. The total cost has been estimated at £S 29 million, presumably to be shared by Syria and Lebanon. Parallel highways would certainly permit a great increase in traffic and would considerably reduce the prevailing high accident rate, by making possible the accommodation of slow-moving truck traffic and high-speed vehicular traffic on separate roads. Since the problem is not immediately urgent and the best solution remains to be worked out in detail, the mission considers it unnecessary to make specific proposals. It suggests, instead, that over the next five years the two governments jointly finance an engineering survey of the problem in order to prepare definite plans; an expenditure of £S 100,000 by each government should suffice.

The third most important transversal connection with the Mediterranean is that between Homs and Tripoli, served both by the DHP railway and by road. The road is of some importance, but several sections are in bad condition, particularly the 10-15 kilometer section just west of Homs and a shorter section passing through Lebanon before coming to Tell Kalakh. Improvement of this road, however, can probably be handled

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within the framework of the maintenance program proposed below. It is important that the Syrian and Lebanese governments come to an agreement on better maintenance of the section before Tell Kalakh.

Aside from the trunk highways discussed above, the mission has considered certain special road projects, including two which would provide better links between Homs and Hama on the one hand and the Syrian coast and Latakia on the other. Fundamental improvement of the road from Hama to Banias whence a road runs north to Latakia has sometimes been proposed. The mission believes a more economical solution would be to build a link between Hama and the main north-south road running through the Ghab for which provision has already been made in the Ghab project. The Ghab road would in turn connect with the Aleppo-Latakia highway. We have accordingly included £S 1.5 million for the building of this link in the program recommended for the next five or six years. Homs is now linked with the Syrian coast by a poor and rather circuitous road which branches off from the Homs-Tripoli highway at Tell Kalakh and passes through difficult terrain. It has been proposed, instead, to construct a shortcut between Akkari and Hamidiye which would connect with the coastal highway to Latakia and would cost about £S 1.8 million. In the mission's opinion, however, construction of this road is not very urgent, particularly since the Homs area is fairly well served by the port of Tripoli. The mission suggests, therefore, that it be built only toward the end of the program if funds are available.

Elsewhere the mission has pointed to the potential importance of the tourist trade. In order to stimulate this trade some of Syria's principal historical monuments such as the Krak des Chevaliers, the ruins of Saint Simeon, etc., should be made more accessible by road. The mission accordingly suggests that £S 1.5 million be allocated to construct such roads.

Road Maintenance[30]

The construction of new roads will be of little avail if they are allowed to deteriorate quickly. By and large maintenance has been poor in the past, although apparently not because of inadequate appropriations. Over the five-year period 1949-1953 an average of £S 3.3 million annually was allocated for maintenance; in 1954 £S 5.8 million was so allocated. The

[30] See Annex H, p. 439.

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tence to appraise this program. In view of the many other claims on public funds, however, it suggests that the program be reviewed to reduce the target expenditures to about £S 10 million. In this review the highest priority might be given to the expansion of the telephone network in cities which are experiencing a rapid growth such as Kamichliye, Aleppo and Latakia, and to the improvement of interurban connections. The contemplated construction and equipment of a new transmitter for international communications might be given a lower priority.

VII PROPOSED EXPENDITURES

Table 7 provides a projection of government expenditures on transport and communications over the six-year period 1955-1960. This projection takes into account not only the recommendations of the mission but also expenditures, such as those on railways and on road maintenance, which are determined by force of circumstance or the declared intentions of the Syrian government. The heavy increase in expenditures proposed reflects in major part the need to overcome the lag in transport facilities which handicaps the Syrian economy today.

TABLE 7 Past and Projected Expenditures on Transport and Communications

(Thousand £S)

	Past outlays			Projected outlays, 1955–60	
	Av. 1950–52 (actual)	1953 (estimate)	1954 (estimate)	Annual average	Total
Roads (total)	5,078	5,380	9,278	17,125	102,750
Construction and improvement (total)				11,008	66,050
Latakia-Aleppo				1,228	7,370
Aleppo-Raqqa				580	3,480
Raqqa-Jezireh				7,625	45,750
Hama-Ghab				250	1,500
Aleppo-Damascus				667	4,000
Damascus-Dera'a				217	1,300

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TABLE 7 Past and Projected Expenditures on Transport and Communications

(Continued from page 147)

(Thousand £S)

	Past outlays			Projected outlays, 1955–60	
	Av. 1950–52 (actual)	1953 (estimate)	1954 (estimate)	Annual average	Total
Damascus-Beirut				192	1,150
Tourist roads				[a]	[a]
Maintenance	3,233	3,600	5,800	6,117	36,700
Latakia port	373	500	10,000[c]	6,333	38,000
Railways (total)	641	[b]750	1,209	2,833	17,000
Subventions	641	750	1,209	2,000	12,000
Purchase of DHP lines				833	5,000
Telecommunications	4,114	2,350[b]	4,700[c]	1,667	10,000
Grand total	10,206	8,980	25,187[c]	28,875	173,250

[a] Included in tourist program.
[b] Actual.
[c] Amounts include authorizations unlikely to be spent and are thus not comparable with preceding years.

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mated to cost about £S 36 million and was preferred, but neither project was carried out. There have also been proposals for converting the Hedjaz Railway to standard gauge as far as the border (£S 11 million) and for building an entirely new line south of Damascus at a cost of about £S 34 million.

It is difficult to justify the cost of any of these projects today on the basis of traffic analysis. At present the most important freight movement over the narrow-gauge lines is between Beirut and Jordan, and for this reason the conversion of any part of the system without the rest would only create an obstacle. For pilgrim traffic the same is true, especially in view of current plans to restore the Hedjaz line to Medina. Indeed, the mission feels that when the government acquires the DHP system it may prove more advantageous to turn its narrow-gauge trackage over to the connecting Hedjaz Railway as a natural extension of that line.

Electrification

On a number of occasions it has been asked whether electrification of the Syrian railroads would help to reduce operating losses. The problem has been studied carefully in the case of the DHP narrow-gauge line, both for its entire length and from Beirut to Rayak. Calculations have shown the cost to be prohibitive.

Electrified railways call for expensive installations and high maintenance costs. Under ordinary circumstances economical operation of such lines requires not only cheap power but a dense traffic pattern. Short hauls and frequent schedules with small units (as in metropolitan suburban service) or high-revenue transport on longer hauls are among the favorable factors sought. Perhaps in time these conditions may develop in appropriate Syrian localities. Within the near future, however, it is unlikely that circumstances in any part of Syria will permit railway electrification on an economic basis.

D RAILWAY VS. ROAD DEVELOPMENT

Syria's principal transport problem is how to provide the most efficient and economical method for moving the large volume of goods across northern Syria between Jezireh and Aleppo and Latakia. Since at present neither the existing railway nor the highway systems can cope with this

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problem satisfactorily, the question is posed whether a new railway should be built or a new highway network constructed. 489

A comparison of the economic advantages of rail and road transport today, in any part of the world, is valid only for a specific situation. Both transport media have their distinctive merits, whose relative significance in a given case may tip the scales one way or the other. Their costs, likewise, depend upon local conditions. Thus in examining this problem with respect to Syria—and more especially to the movement of goods between the Jezireh and Latakia—the mission stresses that its calculations and conclusions are offered for this particular situation and not as a universal answer to the "rail vs. road" question.

For the same reason we do not include an exhaustive review of the classical arguments favoring one mode of transport over the other. While taking these abstract comparisons into account, we feel that they are generally recognized and in any event adequately presented in the current technical literature. Those which are mentioned here are chosen for their special interest to the Syrian problem.

General Considerations

A railroad requires a large capital investment but is characterized by long amortization and low operating costs. The initial cost of a road may be much less, especially if the simpler types of construction are acceptable, but its maintenance is proportionately more expensive. How these figures compare for northern Syria will be examined in later pages.

Apart from costs a railway offers a somewhat better guarantee of year-around transport regardless of seasons or weather conditions. This is partly inherent in its construction, but a contributing factor is that railway maintenance is necessarily more exacting, is less likely to be entrusted to crews lacking technical skill, and must be performed promptly if schedules are to be maintained. In a railway, the same entity has responsibility for scheduled transport and for maintenance-of-way; in trucking these responsibilities are separate. Thus we might conclude that a railway affords greater security in meeting shipping connections if these are critical.

All of this presupposes, of course, a railroad which tries to and does maintain a high record of scheduled performance. Even with an efficient administration there may be strikes and similar interruptions beyond the administration's control. In highway transport these are less likely to

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occur, or if they do they seldom cause complete stoppages, for trucking is carried on by many independent operators, while railway labor, under a single employer, is apt to be tightly organized. By the same token railway labor may enjoy certain social benefits (wage levels, security, medical care, pensions, etc.) which are not so easily provided for independent truckers. This is partly because of organization and partly because a railroad requires less manpower to move a given tonnage. Viewed another way, however, this means less employment in the transport sector.

Rail freight rates are more easily stabilized and controlled, in contrast to the wide seasonal variations in rates now demanded by Syrian truckers. On the other hand the higher free-market truck rates may, on a year-round average, reflect more closely the actual cost of the service. As long as the Syrian railways operate at heavy losses which must be made up in taxes, their lower rates are misleading.

Ability of the government to control the rates of a railroad (especially of a government-owned one) permits manipulation of transport charges in favor of specific commodities, producing areas or shipping points. This power is often cited as an advantage, and when reasonably employed can be a useful implement to assist economic stability or development. Unfortunately it may just as readily be used for political purposes to stimulate production at economically unsound locations.

A popular general argument for trucks is that they permit continuous "door to door" transport without reloading. Under many circumstances this factor can be decisive but only if transshipment is not otherwise required by reason of trade patterns (as now at Aleppo), customs inspection, or restrictive legislation (see Road Transport). In any event its importance to Jezireh agricultural exports is questionable. In most cases crops must be transported separately from field to collection point, whether the later long-distance hauling be done by rail or road, and either form of transport can deliver as easily to shipside if its line runs to the port.

Roads, of course, are more readily adaptable to changing patterns of production. Countries in transition, especially, must keep in mind that economic planning cannot be omniscient and that development may take place in ways other than expected. There have been instances of costly railway construction, seemingly justified at the time, afterward left without revenue because of some unforeseen new development, shift in productive areas, or depletion of a local natural resource. But usually it is a feeder line that is most vulnerable to such misfortune. Here the question is one

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of a trunk route linking a broad productive region with centers of trade and export shipping; the gamble is smaller. Syria's feeder lines, for some years into the future, will certainly be roads rather than branch railways.

One great distinction between railway and highway development lies in the construction schedule. If necessary a workable road can be built quickly as a mere earthen track. Thereafter year by year it can be progressively gravelled, widened, oiled, paved, perhaps widened again, equipped with stronger bridges,[4] and so on as the need arises and resources become available. With a railroad this principle of gradual construction is possible in certain limited respects, such as later double-tracking a single-track line, installing heavier rails or adding to the rolling stock. But to be workable a railway must be installed as a more or less complete unit, with rolling stock and an operating staff, and its construction should be good for at least 50 years of service with normal maintenance.

Special Syrian Conditions

Cargo from the Jezireh being so seasonal, it is sometimes argued that trucks have the advantage of being usable in other regions during the off-season. But this argument ignores the fact that the demand for transport in other parts of Syria is likewise governed by the harvest.

Of greater significance is the prospect of transporting commodities such as grains in bulk rather than in sacks. The cost of imported sacks and the extra labor of filling them cut appreciably into the profit on local produce. Here the advantage lies with railways. Bulk shipment by truck is technically feasible but calls for a higher degree of responsible organization than now exists in most of the Syrian trucking industry. Moreover, bulk transport requires particular types of vehicles, limiting their usefulness for alternative cargo and accentuating the need for a more constant year-round movement of commodities to keep them profitably occupied.

For the transport sector, as for the Syrian economy as a whole, one of the broad aims of development must be to reduce the exaggerated seasonal character of the country's economic life. Neither rail nor road transport can be operated cheaply with costly equipment and facilities idle a large part of the year. Accordingly the mission's recommendations for crop storage facilities in the Jezireh and at Aleppo and Latakia (see the section

[4] In some countries today an initially narrow road is built with wide bridges and culverts, saving costly replacement and traffic interruptions when the road is widened.

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on Ports in this Annex) are no less essential to a solution of the east-west transportation problem than they are to improvement of the farmer's marketing position.

Comparative Cost of Rail and Road Transport

In the specific case of transport across northern Syria, we have tried to determine the comparative cost to the economy of road and rail transport in terms of depreciation of the capital investment, maintenance, fuel and supplies. Depreciation on railway rolling stock has been figured on the basis of 30 years' life, on motor vehicles on the basis of 7 years' life. No allowance has been made for depreciation of the investment in permanent way for the projected railway because the life of the rail roadway may be considered virtually indefinite with normal maintenance and renewals. (The latter are included under "Maintenance" in Table 5.) We have assumed, however, that with the development of heavier and speedier motor vehicles, a highway would be obsolescent within 30 years and require complete reconstruction. As already indicated in the mission's Main Report, we have assumed a freight movement of about 700,000 tons from Jezireh to Aleppo, of 150,000 tons from Aleppo to Jezireh, of 500,000 tons from Aleppo to Latakia and of 250,000 tons from Latakia to Aleppo. Of this total traffic of somewhat over 400 million ton-kilometers annually, a new railway might be expected to carry about two-thirds. The comparative investment would be about £S 170 million, including £S 24 million for rolling stock, for a railway and perhaps £S 97 million, including £S 40 million for some 800 12.5-ton trucks, for road transport.

Table 5 shows the results of our calculations. They leave no doubt that rail transport would be much more economical than road transport. The estimates are, of course, subject to a margin of error; and the annual savings in costs might best be stated within a range of £S 15 to £S 20 million.

The real question, however, is whether this saving, which is equivalent to an increase in real national income, is sufficient to justify the additional capital investment required by a railway. We have previously estimated this difference in capital cost at £S 73 million. The actual difference, however, is likely to be greater. Even if a railway were built, it would still be necessary to undertake some investment in roads, not only for the construction of feeder roads for the railway, but also for the improvement of existing main routes. The alternative is not rail investment or road invest-